

23.

C

Eales

Retinal Hemorrhage



*With the Author's Compl<sup>ts</sup>*

---

23.

CASES OF

# RETINAL HÆMORRHAGE,

ASSOCIATED WITH

EPISTAXIS AND CONSTIPATION.

BY

HENRY EALES,

SURGEON TO THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

---

REPRINTED FROM THE "BIRMINGHAM MEDICAL REVIEW."

---

BIRMINGHAM :

HALL & ENGLISH, HIGH STREET.

1668532

# CASES OF RETINAL HÆMORRHAGE, ASSOCIATED WITH EPISTAXIS AND CONSTIPATION.

---

Case I.—G. B., æt. 16, a cock and tap maker, first admitted, January 12th, 1880.

*History.*—For the last two years has been subject to epistaxis, usually from the left side of the nose. Has been much troubled by constipation of the bowels during same time. Does not get up at night to make water. Has never had scarlet fever or rheumatic fever. No evidence of syphilis, hereditary or acquired. Not subject to sickness, headache, or cold feet. About nine weeks ago noticed “a kind of cloud, and stars, before the left eye.”

*State on admission.*—A fairly healthy looking lad, well nourished, of moderate height.

*Heart.*—Apex in 5th interspace  $3\frac{3}{4}$  inches to the left of the middle line, just under nipple. First sound at apex replaced by a murmur. Pulmonary 2nd sound accentuated. Heart's action slow and regular. Pulse 50.

*Urine.*—Pale, clear, acid, sp. gr. 1012. A trace of albumen; no sugar, no casts or crystals.

Tongue furred and breath foul.

*Ophthalmoscopic Examination.*—*Left Eye.*—A large, irregular, roundish, partially decolorised hæmorrhage, near fovea, and several smaller hæmorrhages nearer

periphery ; a few striated. Vitreous full of opacities. *Right Eye*.—Fundus healthy, except that retinal vessels are very full and tortuous, especially veins.

*Vision*.—*Right Eye* =  $\frac{1.5}{xv} = 1$  = normal. *Left Eye* = shadows only.

This case did well for a few weeks when glaucoma set in, which has resulted in blindness, though the hæmorrhage cleared up. I shall not trouble to record an account of his glaucoma, which is almost unique in so young a lad, though not rarely a sequence of retinal hæmorrhage in older persons.

May 28.—I made the following note : all hæmorrhages on retina have disappeared, and vitreous is fairly clear ; the retinal vessels are reduced to threads, and there is a well marked glaucomatous cup. Tension = + 2.

June 17.—The night before last, he awoke about 3 a.m. with great pain in his left eye, and sickness, and in the morning the lids were swollen.

*Present state*.—Vitreous quite red with blood ; fundus cannot anywhere be seen in consequence, not even above. Tension = + 2.

Case II.—L. H. J., æt. 19, merchant's clerk.

*History on admission*, August 11, 1879.—Always had good health ; had measles, chicken pox, whooping cough, but never had scarlet fever. Always "subject to bilious attacks if he ate rich things, such as much pastry or fat especially." He usually first notices these attacks in the morning, waking up with sickness but no headache. Does not get up at night to make water. Subject to epistaxis, especially in the summer, and if he exerts himself, for as long as he can remember, but not so badly during the last two years. No evidence of syphilis, hereditary or acquired. For last three months has been blind in left eye.



*State on admission.*—A tall (nearly 6 feet) spare lad.  
*Left Eye:* Vitreous quite black and opaque. Fundus cannot be seen. *Urine*, sp. gr. 1018. No albumen.

Sep. 16.—Fundus cannot be seen, but a red glare can be obtained at the upper part of left eye on ophthalmoscopic examination.

January 24, 1880.—Health is better, no epistaxis since he first came under treatment. Pulse, 55.

*Left Eye.*—Has large floating black bodies in vitreous. Several roundish, ill defined, large, and somewhat decolorised hæmorrhages, all over fundus, one recent, apparently just above disc,  $V. = \frac{15}{50} = \frac{1}{3}$  of normal about. From this time vision much improved, and vitreous cleared up almost completely, vision becoming almost as good as ever (no note of vision kept at this time). He went to work again about the middle of February, but about the second week in March, he had another attack of hæmorrhage into the left vitreous, a few days after having ceased to take his medicine, and vision was again reduced to mere perception of shadows, and fundus oculi was invisible in consequence of dense opacity of vitreous.

April 17.—*Left Eye.*—Fundus cannot be seen; vitreous quite opaque. *Right Eye.*—Vessels full and tortuous, especially veins, but otherwise normal.  $V. = \frac{15}{xv} = \text{normal}$ . Bowels still costive. “Obliged constantly to take salts in morning, but the bowels are then never moved till the following day, although he takes  $\frac{1}{2}$ oz. the very first thing in the morning.” Pulse 55.

May 8.—Retina can be slightly seen above, and presents several partially decolorised hæmorrhages.

Case III.—H. E. P., æt. 20, clerk, first admitted February 26th, 1880.

*History.*—General health, fair; subject to sick-headache for the last five years (since he has been in office), especially

during last six months. Had measles and small-pox when a child. No evidence of syphilis, hereditary or acquired. Subject to epistaxis about once a fortnight two years ago, and for some three years previous to this period, but not since ; does not remember if it was more common one side than another.

*Left Eye* was first noticed to be getting gradually dim on Feb. 23rd ; next day he found he was blind ; about a week before this noticed both eyes puffed up in the morning ; several friends also noticed this, but it went off during the day. Feet never swell.

*Present State.*—A spare lad, of moderate height, healthy in appearance, but wanting in tone and energy. Pulse 55, slow.

*Heart.*—Apex in 5th interspace,  $\frac{1}{2}$  an inch inside nipple. First sound booming, aortic second sound, distinctly accentuated.

Bowels, regular ; no discomfort after food ; appetite, good ; tongue covered with whitish brown pasty fur ; no pain in making water ; does not get up at night to micturate.

*Urine.*—"Pale yellow, clear, neutral, contains phosphates—no albumen."

*Left Eye.*—Vitreous, full of black opacities. Fundus can only be seen above, where one *large*, diffused, roundish, partially decolorised hæmorrhage is found ; rest of retina not seen.

*Vision* = Shadows only.

April 15th.—A fortnight ago taken with great pain over left eye and side of the head, which lasted about ten days ; and during this attack the bowels were so confined that he took four doses of castor oil, three of which he returned, and then the bowels were not properly moved until he had taken  $\frac{1}{2}$  oz. of castor oil daily for a week.



Left eye vitreous opaque. Fundus cannot be seen. Fresh hæmorrhage into vitreous.

Case IV.—R. S., æt. 14. First admitted, January 7th, 1880.

*History.*—Had scarlet fever ten years ago, and rheumatic fever three weeks later. No dropsy after either. Measles five years ago. Severe epistaxis about a year ago, without apparent cause. Frontal headache for past three years, about three times a week, but never sick. Bowels constantly confined for last two or three years, never moved more than two or three times a week. Appetite very large at times. “A cloud passed over the left eye” about three weeks ago, while he was reading, and he has not seen with it since. Does not get up at night to make water.

*Present State.*—A small spare lad for his age, with ruddy complexion.

*Heart.*—Apex, behind 6th rib,  $2\frac{1}{2}$  inches from middle line, and well inside nipple. No thrill; no murmur; both sounds reduplicated, and pulmonary second sound accentuated more loudly than aortic. Pulse 60.

*Urine.*—January 14.—Pale, clear, acid; sp. gr. 1010. A very faint trace of albumen. Scanty mucous cloud. No casts or crystals. January 17th.—Thick, turbid; trace albumen; turbidity disappears on warming; amorphous urates. Pulse 55.

*Eyes.*—Left: several large, irregular, somewhat rounded hæmorrhages all over retina, some partially decolorised. Vitreous full of many large black opacities, except above. Vision = fingers at six inches. Right: Several similar, but smaller hæmorrhages just behind ciliary region. Vision,  $\frac{15}{xv}$  = normal; vessels, full and tortuous, especially veins. Vitreous free from opacities.

April 21st.—Pulse still 55. Bowels regular with aid of

medicine. No trace of hæmorrhages in right eye, and hardly a trace in left eye, either in retina or vitreous. Vision ( $R. = \frac{15}{xv} : L. = \frac{15}{xv}$ ) = normal each eye.

Case V.—W. W., æt. 29, a brewer (for 14 years.) First admitted, May 6.

*History.*—Been very subject to epistaxis for the last five years, but not before, so severely last year as to alarm him. Bleeding generally from the right nostril, and occurs nearly every morning. “Very subject to the bile in the morning,” and vomiting mucus. Bowels generally loose, moved about three times in two days usually. Never had scarlet fever or rheumatic fever, but has had measles. Had “the gravel” six years ago. Drinks “he ventures to say” six pints daily of ale; never drinks anything else. Gets up at night to make water, water often thick. Drinks mostly at night when his work is done. Headaches (frontal) very bad till twelve months ago. Hearing good, sometimes a little dull. No pains anywhere, no twitchings; but used to get cramp two years ago. No cough, Rather short of breath. No gout in family. No evidence of syphilis hereditary or acquired. Used to break out in face (acne?) Sore throat and hoarse voice during two winters, hardly able to speak. Had “bleeding piles” last summer, bowels loose at the time. *Right Eye* went blind suddenly on Sunday, May 2, just before he had dinner at two o’clock, “a cloud passed over it,” and by five o’clock he was quite dark with it. Had only drank about a pint of ale during the morning.

*Present State.*—A well nourished man, of medium height, face puffy, capillaries on face and nose unusually distended, tongue furred. Has all appearances of suffering from chronic alcoholic excess.

*Ophthalmoscopic Examination.*—*Right Eye*: Vitreous full of dark opacities; little or nothing can be seen of

retina, though a red glare can be obtained of fundus. Vision = shadows only.

*Left Eye.*—Looks normal, except retinal vessels are full and tortuous, especially the veins.

*Heart.*—1st sound pure ; aortic 2nd sound accentuated, no palpitation. Pulse 72 firm.

*Urine.*—Faint trace of albumen in urine, no casts.

June 17.—Right eye improved, but retina cannot be clearly seen yet in consequence of opaque vitreous.

I have for a considerable period now taken much interest in the subject of albuminuria, and its associated retinal disease, especially that form of temporary albuminuria, which appears to be most common about the age of puberty, and to be functional and not organic. The following facts have particularly attracted my attention as characterising this affection. 1. That the bowels are confined habitually. 2. That there are symptoms of high arterial tension, and 3. That the retinal vessels are invariably full and tortuous, especially the veins, which are unusually distended. In reporting on the state of the retina in one hundred cases of granular kidney, (Birm. Med. Rev., January, 1880,) I alluded incidentally to 14 such cases, in five of which I found small white specks in the retina: *i.e.*, in 33 per cent.: presumably caused by previous hæmorrhages. By a singular coincidence, the above five rare cases have all been under my observation at the same time, and so I have been enabled to carefully compare their symptoms ; and have been induced to take careful notes of their cases which I have thought of sufficient interest to publish in the above abridged form. My thanks are due to Dr. Saundby for kindly examining and reporting on the state of the heart and urine in these cases. Case V. is introduced for comparison, for though somewhat similar to the rest, it differs



in many important particulars, and of which I will speak hereafter.

The following facts have characterised the first four cases. All are lads; all have been troubled more or less with sluggish and even constipated bowels; none having daily movements of the bowels without the aid of medicine. While under treatment, all have had symptoms ? of high arterial tension, such as slow pulse, accentuation of the sounds of the heart. None have been subject to polyuria. Two have had very slight traces of albumen in the urine, while two have had no albumen in the urine. In the two cases in which albumen was found casts were looked for but not discovered. All have been subject, more or less, to epistaxis. In all there has been profuse hæmorrhage from the left retina, while, in one case only, a few small hæmorrhages were found in the right eye also. In all the cases the hæmorrhages have been roundish and diffused, as though situated in the granular layer of the retina, while, in one case only, a few of the hæmorrhages were striated, *i.e.*, in the nerve fibre layer of the retina. In all the cases the retinal vessels have been full, tortuous, and distended, especially the veins, in both eyes. In none has there been any other evidence of structural disease in the retina besides the hæmorrhage and distended state of the vessels. In one case only the whole retina was visible, namely, the one that had a few hæmorrhages in the right eye; and in this eye I would especially point out that not only were the hæmorrhages in the granular layer, but were found only at the periphery; that is, at the most distal end of the branches of the retinal artery and veins. In two cases complete recovery occurred, no trace of retinal disease being left; though in one a recurrence of the hæmorrhages took place, which is not uncommon in my experience of these

cases. The same thing occurred in the case which terminated in glaucoma, as well as in case IV., that is in three out of the four cases.

In no case was there any evidence of primary retinitis, or any constitutional disease, such as syphilis, leucocythæmia, anæmia, &c., to account for the hæmorrhage. I think, therefore, we are compelled to look on (high arterial tension), ~~with~~ dilated arterioles, and capillaries, and consequent distended venous system (all increasing the tension in the capillaries) as the cause of the hæmorrhages, both in the eyes and from the nose, in both of which places the hæmorrhage probably occurred from the capillaries. The seat of retinal hæmorrhages in the granular layer, and at the periphery, are in accordance with this view. We have ample evidence of high arterial tension in all of these cases, and the retinal appearances and epistaxis fully coincide with a state of venous and capillary distension; but it may be said, if you assume a general state of arterial relaxation, how do you reconcile this with high systemic arterial tension?

We know from physiologists that when the splanchnic nerves are stimulated there is inhibition of the muscular movements of the bowels, with vaso-motor constriction of the arterioles of the whole alimentary canal, and also in the kidney, which is only imperfectly compensated for by dilatation of other areas, and so there is at once a rise in pressure in the carotids, but no polyuria, unless the nerves going to the kidney are previously cut, when it at once sets it. Now I assume that in these cases the sluggish bowels, with absence of polyuria, though evidence of high arterial tension accords with vaso-motor constriction and inhibition of the whole splanchnic area, causing resistance to the passage of blood through the portal system, and so causing increased tension in the

systemic system, with compensating dilatation of the systemic arterioles and capillaries, and increased flow into and distension of the systemic venous system, which is the cause of the epistaxis and retinal hæmorrhage ; the tension being too great for the capillaries which give way. It must be remembered, too, that an inactive state of the muscular movements of the bowels would tend to increase the stagnation in the portal venous system, and increase the resistance offered.

In short, I consider the constipation, however produced, as the starting point of all the other phenomena in these cases. It may be said surely local hæmorrhages demand a local cause? We are not certain that hæmorrhages do not occur elsewhere, though probably not ; for in the mucous membrane of the air passages and meninges of the brain, and in the secreting membranes generally, the capillaries probably relieve themselves, either by serous transudation, or are saved from rupture by some counter-posing force, such as is found in the contraction of the intestine on its contents, and similar state of tension in most gland ducts ; but in the nose there is no counter-posing force ; hence epistaxis seems to be the commonest form of hæmorrhage.

In the retina there is a great want of supporting connective tissue, and the retinal arteries and veins cannot relieve themselves through any other channels, having no collateral anastomoses, as most vessels do, hence the wonder at first is that rupture does not occur here more often ; the explanation is to be found in the tension of the ocular contents, vitreous, &c., supporting the vessels, and so in spite of their unfavourable conditions, we find hæmorrhage from the retinal vessels comparatively rare, while epistaxis is very common : however, the retina is undoubtedly one of the commonest seats of hæmorrhage in high arterial tension from all causes.



The occurrence of the hæmorrhage in three of these cases on the left side, and in the 4th worst on the left side, is I think, more than mere accident, and I cannot help thinking that the left carotid artery coming off direct from the aortic arch, and the greater length and more indirect course of the left innominate vein, which joins the other almost at right angles, may cause a slightly higher tension in the capillaries on this side, and so account for the greater frequency of hæmorrhage on this side. Possibly too, the fact of the right arm being supplied by the innominate artery, through the sub-clavian, and being in constant use, tends to lessen the tension in the right carotid: because when muscles are used their capillaries are dilated, and there is local diminution of tension.

I do not propose to discuss here the occurrence of glaucoma in case I. though very interesting, and I believe unique in so young a lad: but the fact that this case is the worst, and is suffering from mitral regurgitation, is strongly in favour of the overloaded state of the venous system being a factor in these cases telling back on the already over distended capillaries.

What is the original cause of the sluggish bowels I cannot say. It is interesting that all of these cases have been in lads. Probably females are saved from retinal hæmorrhage by their menstruation.

Case V. is introduced as a contrast. Here the patient was older, the bowels are habitually loose, there was polyuria, and all the history and evidence of chronic alcoholism, with probably slight increase of arterial tension (shewn by accentuation of the aortic second sound) and gastro-intestinal catarrh. Here I imagine in spite of a general vaso-motor dilatation in the alimentary, and all other areas, the tension is raised by the stimulant to the

heart, and possibly by the blood being altered in some way, that makes its passage through the capillaries more difficult ; as would appear to be likely in these cases. Of course it is possible that some blood changes may be a factor in the other cases also. It is curious too that in this case the hæmorrhage was limited to the right eye and not the left. Possibly some unknown local peculiarity in the arrangements of the vessels might explain it. Possibly a transposition of the innominate artery to the left side. I would particularly draw attention to the fact that the epistaxis in this case, and in case I. was usually from the same side as that on which the retinal hæmorrhage occurred, as this appears to me to be strong presumptive evidence of both being due to the same cause, and would point to this cause being the general state of the vessels on one side, and not to a local retinal disease, or to accident.

The treatment in all cases consisted for the most part in mag. sulph., or some other purgative, or laxative, taken daily in the morning, and in a mixture containing digitalis and belladonna, with some bitter tonic, and sometimes pot. iodide.

N.B  
 The existence of "High arterial Tension" was not confirmed by subsequent more careful examination directed to this point. In no case did the Sphygmograph give an indication of high Tension, while in one case it indicated low arterial Tension was low.

NB

case (ii) & case (iv) have been under  
my observation constantly since the  
above was written - and in each case  
there have been several ~~occurrences~~  
recurrences of Retinal Hemorrhage  
in both eyes. <sup>always worse in the left eye</sup> A careful  
watching of them has enabled  
me to more definitely describe  
the character of this form of  
Retinal Hemorrhage in my  
paper ~~read~~ read at the Congress  
than I was able at the time  
of writing this.

H. Bates





